

Pulse oximetry color coded heart rate monitoring system using zigbee

Abstract

This paper proposed a color coded bracelet prototype heart rate monitoring system communicating with wireless sensor network technology. The use of an integrated design with microcontroller and a ZigBee transceiver gives the possibility of developing wireless devices with small dimensions, low power consumption, and good computing capability. The pulse oximeter is used as a sensor to detect the heart rate from the user while ZigBee modules get all commands from microcontroller unit with complete ZigBee stack inside. Then, the heart rate information is obtained using a pulse oximeter, and it is displayed through the multicolor light emitting diode (LED) indicator on the bracelet. The LED indicator can show the different colors that indicate the range of heart rate. The results will help coaches as well as individual to monitor and regulate the user exercise training using a computer.